

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/039515

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F22B1/08 E21B43/24 C02F1/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F22B E21B C02F F01K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| A | US 2003/127226 A1 (HEINS WILLIAM F) 10 July 2003 (2003-07-10) paragraphs '0014! - '0025!, '0043! - '0056!; figures 4,5 abstract | 1-34 |
| A,P | US 6 733 636 B1 (HEINS WILLIAM F) 11 May 2004 (2004-05-11) column 4, line 17 - column 6, line 67; figures abstract | 1-34 |
| A | US 4 418 651 A (WYATT ET AL) 6 December 1983 (1983-12-06) column 5, line 22 - column 7, line 5; figures 1,4 abstract | 1-34 |
| | ----- -/-- ----- | |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

27 May 2005

Date of mailing of the international search report

06/06/2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| A | US 4 730 577 A (HOUGHTON ET AL) 15 March 1988 (1988-03-15) column 2, line 19 - line 51 column 2, line 63 - column 3, line 55; figure abstract | 1-34 |
| P,A | ----- US 6 675 747 B1 (GOIDICH STEPHEN J ET AL) 13 January 2004 (2004-01-13) the whole document ----- | 1-34 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US2004/039515

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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| US 6733636 B1 | 11-05-2004 | US 2003127226 A1 US 2005022989 A1 CA 2307819 A1 | 10-07-2003 03-02-2005 07-11-2000 |
| US 4418651 A | 06-12-1983 | NONE | |
| US 4730577 A | 15-03-1988 | NONE | |
| US 6675747 B1 | 13-01-2004 | CA 2437479 A1 CN 1485568 A | 22-02-2004 31-03-2004 |